Serial Number 1308

DATA MASTER

A Database Manager

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J & L SOFTWARE
P.O. Box 171
State College, PA 16801

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INTRODUCTION

The DATA MASTER is an interactive command-driven program for managing data in the record and field format. Each operation is performed in response to the command

ENTER COMMAND:

Each command has the form:

COMMAND option1 option2 ... option N

where the option(s) is separated from one another and the command by at least one blank space.

The following chapters describe the DATA MASTER file structure and each of the commands available to manipulate the data in these files. DATA MASTER is powerful in the respect that it has a great deal of flexibility in the manner in which the data can be transferred from file to file and in its completely generalized record and field format. It is slow in the sense that all of its data is kept on the disk until it is needed. Subsequently, this calls for numerous disk accesses. It also takes some practice to acquire the command skills. But when this is done this type of interaction is much faster than the menu-driven programs.

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THEORY OF OPERATION

DATA MASTER saves transactions entered with the ADD command on the disk. These transactions are stored in the record and field format in the file named "Filename" created with the CREATE command. Each record has a number of fields, each with a name "Fieldname" associated with it. Each field may contain a date, number, name, or it can be an arithmetic function of the other numeric fields (including itself).

Records are retrieved from the database in a "selected set" or "current set" with the FIND command. This command allows you to "find" records according to values contained in their fields. This set of records becomes the current set. Further selection from this set can be done with the SEARCH command. The records "searched" then become the current set. All commands, except the FIND command, work with the current set in memory.

To repeat - the FIND command works with the complete set of records on disk and the SEARCH command works with the current set or selected set in memory. Once you have selected the current set, the other commands allow you to process that data.

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COMMAND SUMMARY

The following are the commands available in DATA MASTER:

COMMAND	DESCRIPTION	PAGE
ADD	Used to add records to the database	19
CALC	Turns the calculator on	27
CHANGE	Allows the correction of selected records	17
CLEAR	Clears memory. Use before loading another database.	27
CREATE	Used to describe the structure of a new database	6
DELETE	Used to delete the selected records	19
DOCALC	Calculates for the selected set	27
FIND	This command brings selected records into DATA MASTER from the disk	12
FORMAT	For setting up formats for the LIST command	21
FUNCTION	Used to define arithmetic functions on the numeric fields	22
LIST	For printing out the records of the current database	15
LOAD	Used to load from disk an existing database into DATA MASTER	9
MERGE	Allows you to update the fields of your database from a file	26

COMMAND	DESCRIPTION	PAGE
NOCALC	Turns the calculator off	27
PLACES	Prompts you for the number of places you wish your numbers to be rounded off and listed	27
REPLACE	Replaces field data on selected fields	27
RESTORE	Used to set the number of records in the database to a new value	28
SAVE	For saving selected records to disk	24
SEARCH	This command allows the selection of records from those previously selected with the FIND command	14
SORT	Used to sort the selected records in any field order	20
STATUS	Allows the Fieldnames and field types to be listed.	26
STOP	Stops program execution or current command	27

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COMMAND OPTIONS AND CONVENTIONS

Most of the DATA MASTER commands can be used with one or more of the following options:

FIELD	This option causes DATA MASTER to prompt for a list of Fieldnames. The command will then work only with the names entered and in the order they are entered.
PRINTER	Allows the output from the command to go to the printer instead of the display.
FORMAT	When the FORMAT option is used with the LIST command, the format specifications outlined with the FORMAT command will be invoked with the listing.
TOTAL	When used with the LIST command, allows the numeric fields to be totaled and printed at the bottom of the listing.
FUNCTION	When used with the LIST command, allows the functions defined with the FUNCTION command to be calculated and listed with the listing.
NOHEAD	Will cause the headings (Page No., Title, and field headings) to be eliminated from the listing. Is used primarily when using DATA MASTER to print labels.
STRUCTURE	When used with the CHANGE command, allows the user to change the Fieldnames and the types of fields of the current database.

The following conventions will be used throughout this manual:

Fieldname	Refers to a field of the current database.
Filename	Refers to the name of a file on the disk.
Functionname	Refers to the name of a function.

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CREATE COMMAND

DATA MASTER creates two files on disk. The first is a file with the same name you have chosen for the database. The second has the name S-Filename, or the name chosen for the database with an "S" as its first character. The former contains all of the records you have entered into the database; in fact, it is your database. The latter contains structure important for DATA MASTER to operate on the database. It is referred to as the STRUCTURE file.

CAUTION

Erasing either of these files will make DATA MASTER inoperative!

CREATING A DATABASE

To create a database with DATA MASTER using the CREATE command:

1. Put diskette containing DATA MASTER in any drive
2. LOAD DATA MASTER
3. RUN

DATA MASTER will then prompt you with:

ENTER COMMAND? CREATE Filename Di Li

where Di is the drive number and Li is the number of characters per file record.

EXAMPLE: INVENTORY D8 D100

will create a disk file with the Filename INVENTORY on Drive #8 and each record on the file may contain 100 characters.

DATA MASTER will now prompt you for:

NUMBER OF FIELDS? — How many fields will each record contain. Maximum 20.

For each field DATA MASTER will prompt:

NAME OF FIELD? — Give a one (1) word name for this field. You will refer to this field by this name in the DATA MASTER commands.

TYPE OF FIELD? — Your responses are:

R - This field will contain a numeric floating point number.

RT - This field will contain floating point numeric information that will be totaled on command.

I - This field will contain an integer number.

IT - This field contains an integer that will be totaled on command.

S - This field contains string (character) information.

D - This field contains a date. All dates must be of the form YYMMDD.

F - This field contains the value of the evaluated function (see below).

FT - This field contains the value of the evaluated function that will be totaled on command (see below).

Function field types are of the form:

(Fieldname/value) (operator) (Fieldname/value) (operator) ... etc.

where

Fieldname - Any previously defined Fieldname (it can also be the Fieldname of this function) of your database.

Value - Any numeric value (a constant).

Operator - + means add
- means subtract
/ means divide
x,* means multiply

NOTE

At least one space must separate F/FT from the function and at least one space must separate each element of the function.

EXAMPLE:

FT Fieldname * Fieldname + 2.23 / Fieldname

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LOAD COMMAND

The command

ENTER COMMAND? LOAD (options)

allows the loading of the previously saved files, functions, and formats. The command has the form:

LOAD Filename Di
or LOAD FORMAT #
or LOAD FUNCTION

where:

Filename	-	The name of the file containing the records to be loaded.
Di	-	The number of the disk drive which contains the file. Enter in the form Di. Ex. D8
FUNCTION	-	Load the functions previously saved as your current functions.
FORMAT #	-	Allows DATA MASTER to load into the system the format previously saved under the number # as the current format. There are ten functions allowed in the system and ten functions can be saved on diskette. Ten formats are allowed to be saved on diskette, but only one can be in the system at a time.

FIELD - This option allows DATA MASTER to prompt you for a list of Fieldnames.

The names you enter and the order in which they are entered determine where the fields loaded from disk will reside in the current database.

NOTE

This option cannot be used when loading the initial database.

See the SAVE, FORMAT, FUNCTION, and STATUS commands.

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ADD COMMAND

The ADD command has the form:

ENTER COMMAND? ADD

Options available:

FIELD

The ADD command allows you to enter one record at a time into the database. DATA MASTER will prompt you for the input into each field of the database. When finished adding transactions (records) key STOP in response to any Fieldname prompt and DATA MASTER will return to its command processor.

Any partially entered transaction will not be entered into the database.

EXAMPLE:

```
ENTER COMMAND? ADD FIELD
ENTER FIELDNAMES?  Fieldname Fieldname Fieldname ... etc.
```

In the above example, DATA MASTER prompted for Fieldnames in response to the FIELD option. DATA MASTER will only prompt for data for those fields entered.

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FIND COMMAND

The command

ENTER COMMAND? FIND (options)

has the general form

FIND (Fieldname) (operator) (value)

where

Fieldname - Any Fieldname within your database. The STATUS command will display the Fieldnames (also field types).

Operator - Any of the following:

= means equal
< means less than
<= means less than or equal to
=< same as above
> means greater than
>= means greater than or equal to
=> same as above
<> means not equal to

Value - A name or number used to compare with the contents of Fieldname for each record in the selected set.

EXAMPLE:

FIND DATE < 821209

will find all records with a value in the DATE field less than 821209.

The FIND command can also have the form:

FIND ALL	-	This will select all of the records in the database.
FIND	-	Same as above.
FIND Fieldname Value1 Value2	-	This will select all records in the range Value1 to Value2.

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SEARCH COMMAND

The command

ENTER COMMAND? SEARCH (options)

has almost the same structure as the FIND command except that it works only on previously selected records. In other words, you must FIND records from the database, then you can SEARCH them. FIND gets sets of data from the database and SEARCH selects subsets of that data.

NOTE

If you have an unsuccessful SEARCH - DATA MASTER searches zero records. You must use the FIND command again to get a new set of records from your database.

The SEARCH command has the following form:

SEARCH (Fieldname) (operator) (Fieldname)

where the structure of the command is the same as the FIND command.

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LIST COMMAND

The command

ENTER COMMAND? LIST (options)

has many forms, the simplest being

ENTER COMMAND? LIST

This form of the command will list all of the previously selected records to the screen without any formatting. The next form:

ENTER COMMAND? LIST FIELD

will cause DATA MASTER to prompt for the Fieldnames you wish listed. The order in which you list the names determines the order in which they are listed. Only those fields listed will be output.

In any LIST command you may enter any of the following options any place in the command as long as it follows LIST. They may be placed in the command in any order.

FORMAT	- Will format your listing according to the current format. See FORMAT, SAVE, and LOAD commands.
FUNCTION	- Will perform the current functions on the data and list the results under the function names. See FUNCTION, SAVE, LOAD, and STATUS commands.

TOTAL - Will total all fields with RT, IT, or FT as the field types as well as all current functions (only if the FUNCTION option is contained in the command).

PRINTER - Will output the listing to the printer.

NOHEAD - Will cause the headings (Page No., Title, and field headings) to be eliminated from the listing. Use this option when printing labels.

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CHANGE COMMAND

The command

ENTER COMMAND? CHANGE (options)

allows you to change the previously selected records a record at a time. DATA MASTER will print out to the screen a record and then prompt:

CHANGE(C), DELETE(D), NEXT(N), or BACKSPACE(B)?

If you choose C then DATA MASTER will prompt you for input to each Field-name chosen. For any field you do not wish to change, simply key in the RETURN key and no change will take place. Any other response will be entered into that field.

If you choose D you will delete the complete record from the database.

An N response will cause DATA MASTER to go to the next record without changing the current one.

Responding with a B will cause DATA MASTER to go to the previous record without changing the current record.

The CHANGE command can have the form:

CHANGE FIELD

This form will cause DATA MASTER to prompt for the list of Fieldnames you wish to change. Only those names listed will print out to the screen.

The last form of the CHANGE command is:

CHANGE STRUCTURE

This allows you to change the structure of the current database. DATA MASTER will prompt you with the current Fieldnames and types and give you the opportunity to change names and re-define field types and functions.

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DELETE COMMAND

The command

ENTER COMMAND? DELETE

will delete all of the records that have been selected with either the FIND or SEARCH commands.

USE WITH CARE

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SORT COMMAND

The command

ENTER COMMAND? SORT

has the form:

SORT Fieldname Fieldname ... Fieldname

DATA MASTER will sort the selected records in ascending order according to the order of the Fieldnames in your command. For example:

SORT NAME DATE AGE

will first sort the records by NAME. If any records have the same values in the NAME field, DATA MASTER will sort those records by DATE. If any of those records have the same value in the DATE field, then these records are sorted by AGE, and so on...

Any subsequent command until a FIND command is executed will work with this sorted list of records.

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FORMAT COMMAND

This command

ENTER COMMAND? FORMAT

will cause DATA MASTER to prompt you for all of the pertinent information necessary to allow you to set up formatted output for both the screen and the printer.

NOTE

A zero (Ø) response or a null response (a keyed RETURN) to a request for the beginning column of a Fieldname will cause this field not to be printed with any LIST command containing the FORMAT option.

CAUTION

This command may take some trial and error on your part - so it's a good idea to select only a few records with the FIND and SEARCH commands for your listing until you establish a satisfactory format.

See SAVE, LOAD, and LIST commands.

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FUNCTION COMMAND

The command

ENTER COMMAND? FUNCTION (option)

has the following form:

FUNCTION (Function #) (Functionname) (Fieldname/value) (operator) (Fieldname/value) (operator) (Fieldname/value) ... etc.

where

Function #	-	A number from 1 to 10. DATA MASTER allows ten current functions.
Functionname	-	A one-word name for this function - any listing will print out the Functionname in the same manner it does the Fieldnames.
Fieldname	-	Any valid Fieldname of your database.
Value	-	Any numeric value.
Operator	-	+ means plus - means minus x,* means times / means divide by

To delete a function from your current list, simply type

FUNCTION #

and the function with the number # will be deleted from the current function list

See SAVE, LOAD, LIST, and STATUS commands.

NOTE

This function capability is different from the function capability built into the fields of the database. This function option allows you to play "what if" with the database without changing its structure.

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SAVE COMMAND

The command

ENTER COMMAND? SAVE (options)

allows you to save the current functions, format, and selected records to the disk.

The command takes the form:

```
        Filename (options)
SAVE    FUNCTION
        FORMAT #
```

where

Filename	-	The name of the file in which the selected records will be saved.
FUNCTION	-	Saves the current functions.
FORMAT #	-	Saves the current format under the number #.

The options available for the SAVE command are:

Di	-	The drive number where the file is to be saved. Ex D9.
Li	-	The character length of the records of the file to be saved. Ex L100.

STRUCTURE - Causes a structure file to be created along with the database. This allows you to use the newly saved file as a database.

FIELD - This option allows you to choose the fields you wish to save and the order in which they will be saved.

NOTE

The SAVE command only saves those records currently chosen through the FIND and SEARCH commands.

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MERGE COMMAND

The command

ENTER COMMAND? MERGE (options)

allows you to update your database with data from a disk file.

The command has the form:

MERGE Filename Di

where:

Filename - The name of the file containing the data to merge.
Di - The number of the disk drive containing Filename.

The MERGE command assumes the first field on the Filename file to be the "key" field. It will search each record of your database until it finds the first occurrance of that value in that field and then will replace, in turn, each field of that record with a value from each field of the record from Filename. It will continue until all records from Filename are read.

If no match is found for the key field value, a message is displayed listing the field value that was not located.

Options:

PRINTER - Will display the field values not found to the printer.

FIELD - Causes the fields listed to be replaced with the data from Filename. The first name in the list is used as the key field.

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MISCELLANEOUS COMMANDS

STATUS — Prints out the contents of the structure file which includes the Fieldnames and field types along with the current functions.

Options available - PRINTER

CALC — Turns calculator on. The calculator does the calculating on the field functions. The calculator is on by default.

NOCALC — Turns the calculator off.

DOCALC — Will calculate all of the field functions on the selected set.

PLACES — Will prompt you for the number of decimal places you wish the floating point numbers to be rounded off and listed.

CLEAR — Clears memory. Use before loading a new database.

STOP — Quits the command you are on or the program when in response to the ENTER COMMAND? prompt.

REPLACE — Use as follows:

ENTER COMMAND: REPLACE VALUE

DATA MASTER will respond with:

ENTER FIELDNAMES?

Answer with each Fieldname that you wish to replace its current value with VALUE.

For Example:

```
ENTER COMMAND?  REPLACE Ø
ENTER FIELDNAMES?  TOTAL SUM1
```

will cause the fields TOTAL and SUM1 to be set to zero for all selected records.

RESTORE

Occasionally the disk drive malfunctions or the computer is turned off during a disk write. The file does not contain the number of records it should (or it thinks it has). RESTORE allows you to set it right. Use RESTORE as follows:

RESTORE NO. OF RECORDS

OR RESTORE

and the DATA MASTER will prompt:

ENTER NO. OF RECORDS?

You should respond with a number. More than likely, one less than the number DATA MASTER thinks it has. You can find this number with a FIND ALL command.